What is claimed is:

1. Method for preparing biological samples for analysis, comprising the following steps:

a) placing the biological sample on a two-dimensional support;

b) applying protein-precipitating or denaturing first solution L1 to the biological sample at a first temperature T1 for a predetermined first time period Z1;

c) leaving the protein-precipitating or denaturing solution L1 or applying more protein-precipitating or denaturing solution L1, or applying a protein-precipitating or denaturing solution L2 to the biological sample at a second temperature T2 for a predetermined second time period Z2, with T2 being lower than T1 and Z2 being longer, equal to or shorter than Z1; and

d) drying the sample.

2. Method according to claim 1, wherein a drying of the sample takes place between the process steps a) and b) as process step a1) and/or between the process steps b) and c) as process step b1).

3. Method according to claim 2, wherein said drying of the sample takes place by means of air or vacuum drying.

4. Method according to claim 1, wherein after said process steps b) or b1) as process step b2), the sample is frozen.

5. Method according to claim 1, wherein said biological sample is a cell or tissue sample or a mixture of proteins or nucleic acids or a mixture of macromolecules comprising proteins and/or carbohydrates and/or fats and/or nucleic acids.

6. Method according to claim 1, wherein said solutions L1 and/or L2 are organic solvents and/or solutions with critical pH values and/or solutions with critical ion concentrations and/or salt solutions and/or solutions containing metal ions.

7. Method according to claim 6, wherein said organic solvents are methanol and/or ethanol and/or butanol and/or acetone.

8. Method according to claim 6, wherein said salt solutions contain dissolved salts of picric acid and/or gallotannic acid and/or tungstic acid and/or molybdenum acid and/or trichloroacedic acid and/or perchloric acid and/or sulphosalicylic acid.

9. Method according to claim 1, wherein T1 covers a temperature range of -10°C to 60°C.

10. Method according to claim 1, wherein after said process step d), said biological samples are subjected to a protein and/or nucleic acid determination method and/or a protein-chemical separation method and/or a method for the in-situ analysis of cell structures.

11. Device for performing a method for preparing biological samples for analysis according to claim 1, wherein said device exhibits at least one chamber to receive the biological sample or samples applied to a support and at least one temperature controller for controlling and adjusting the temperature inside said chamber.

12. Device according to claim 11, wherein said chamber can be closed with a lid.

13. Device according to claim 11, wherein said device exhibits at least one vacuum pump to generate a vacuum inside said chamber.

14. Device according to claim 12, wherein said device exhibits at least one vacuum pump to generate a vacuum inside said chamber.

15. Device according to claim 11, wherein there is arranged inside said chamber at least one separation wall.

16. Device according to claim 15, wherein said separation wall can be removed or shifted manually or automatically.

17. Device according to claim 11, wherein several chambers (1, 2, 3 ..., n) are arranged in series and behind each other.

18. Device according to claim 11, wherein several of said chambers are arranged above one another.

19. Device according to claim 11, wherein several of said supports are arranged on one or several sample slides.

20. Device according to claim 11, wherein the individual process steps are executed and controlled manually, semi-automatically or automatically by said device.